Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A method of forming a female spline of a hub unit for supporting a wheel, comprising the steps of:

forming a work for a hub unit which consists of a hub integrally comprising a flange for attaching a wheel and a shaft portion formed with a hole extended in the axial direction and a rolling bearing fitted and attached on said shaft portion of this hub with an outer end of an inner race being fixed at the other end of said shaft portion in the axial direction by plastically deforming by caulking (or clinching); and

subsequently, forming a female spline by semi-dry or dry broaching on said hole of said shaft portion.

2. (Withdrawn) A method of processing a female spline of a hub unit for supporting a wheel according to claim 1, wherein said hole has the form that the size thereof is greater at a portion nearer a portion plastically deformed by caulking (or clinching) of said shaft portion for an estimated amount of

contraction caused by the plastically deforming by caulking (or clinching) and press-fitting of the inner race element.

Claims 3-4 (Canceled)

5. (Withdrawn) A method of processing a female spline of a hub unit for supporting a wheel according to claim 1, wherein said hub unit is provided with a seal or a detachable cap so as to perform a semi-dry or dry broaching work.

6. (Currently Amended) ~~A~~ The method ~~of processing a female spline of a hub unit for supporting a wheel~~ according to claim ~~3~~ 14, wherein ~~said~~ the hub unit is provided with a seal or a detachable cap so as to perform ~~a~~ the semi-dry or dry broaching ~~work~~.

7. (Withdrawn) A method of processing a female spline of a hub unit for supporting a wheel according to claim 1, wherein cleaning means is employed for removing chips attached to a tool in the course of said semi-dry or dry broaching work.

8. (Currently Amended) ~~A~~ The method ~~of processing a female spline of a hub unit for supporting a wheel~~ according to claim ~~3~~ 14, ~~wherein cleaning means is employed for removing~~ further comprising the step of removing chips attached to a tool in the course of ~~said~~ the semi-dry or dry broaching ~~work~~ via a cleaner.

9. (Withdrawn) A method of processing a female spline of a hub unit for supporting a wheel according to claim 1, wherein covering means which is opened only when the tool comes in or goes out is provided either one or both on a side upper than the upper end of said hub unit and on a side lower than a surface on which the hub unit is installed, and semi-dry or dry broaching work is performed by intercepting chips falling on the hub unit by means of this covering means.

10. (Currently Amended) ~~A~~ The method ~~of processing a female spline of a hub unit for supporting a wheel~~ according to claim ~~3~~ 14, ~~wherein covering means which is opened~~ further comprising the steps of:

opening a cover only when ~~the~~ a tool comes in or goes out, the cover being on at least one of ~~is provided either one or both on~~ a side ~~upper than the~~ above an

upper end of ~~said~~ the hub unit and on a side ~~lower than~~ below a surface on which the hub unit is installed~~,~~; and

performing the semi-dry or dry broaching ~~work is performed~~ by intercepting chips via the cover falling ~~on~~ toward the hub unit ~~by means of this covering means~~.

11. (Currently Amended) ~~A~~ The method ~~of forming a female spline of a hub unit for supporting a wheel~~ according to claim ~~3~~ 14, wherein a direction of the broaching ~~work~~ for roughly processing the female spline is the reverse of a direction of the subsequent finishing ~~work~~ of ~~said~~ the female spline.

Claims 12-13 (Canceled)

14. (New) A method of forming a female spline of a hub unit for supporting a wheel, which hub unit comprises a hub having an integral flange for attaching the wheel and a shaft portion with a hole extending therethrough in an axial direction, wherein a rolling bearing is fitted and attached on the shaft portion with an outer end of an inner race being fixed at an outer end of the shaft portion in the axial direction by plastic deformation via one of caulking and clinching; the method comprising the steps of:

forming a cylindrical hole through a shaft portion of a work piece for the hub by cutting;

applying a radially inward force over an entire periphery of the shaft portion of the work piece to reduce a diameter of the hole by a predetermined amount, said predetermined amount being an estimated amount for cancelling deformation otherwise caused in forming the female spline of the hub unit as a final product;

roughly processing the female spline by broaching the hole of the work piece while continuously applying the radially inward force over the entire periphery of the shaft portion of the work piece;

releasing the application of the radially inward force on the shaft portion of the work piece;

fitting and attaching the bearing on the shaft portion of the work piece with an axial outer end of the inner race being fixed at an axial outer end portion of the shaft portion by plastic deformation via one of caulking and clinching; and

subsequently, finishing the female spline by one of semi-dry and dry broaching on the hole of the shaft portion on which the female spline has been roughly processed.

15. (New) The method according to claim 14, wherein the radially inward force is applied by one of (i) press-fitting a ring on the shaft portion of the work piece, and (ii) chucking a part of the shaft portion of the work piece.